TRANSPORTATION PLAN

Moving into, around and through the Southern Berks Region is reliable and predictable. The area is connected to Berks and surrounding counties, enabling local and regional access for businesses and neighborhoods. The municipalities in the Southern Berks Region are served by an extensive transportation system comprised of roads and bridges, bus and paratransit services and rail. In addition, an extensive sidewalk and trail system serves pedestrian and bicycle travel. The roads, bridges, and public transit system accommodate thousands of trips every day.

In addition to experiencing population growth discussed in Chapter 3, the demographic and socioeconomic characteristics of the population in the Southern Berks Region have changed and will continue to change in the future. These demographic changes contain challenges for the provision of transportation facilities and services. For example, three out of the four municipalities have a larger percentage of "Under 10" residents than the county and state. This will cause a need for a viable pedestrian network connecting communities safely to parks and schools. All of the municipalities have larger percentages of working age (25-64) residents than the county and state, and as this population ages, it becomes more important to provide transportation options and services geared to their needs with more emphasis on safety improvements tailored to elderly drivers.

It is also important to remember that there is a direct correlation between land use and transportation needs. As residential and commercial land is developed, more and more people use the roads, and the roads become congested for longer periods of time. This is particularly true for rush hours. In response, roads are improved to address the traffic congestion, the adjoining land becomes easier and more lucrative to develop, and more traffic is generated.

The highest priority of this plan will continue to be to preserve and maintain the existing transportation system with a primary focus on paving and upgrading existing roads and bridges.

Transportation Planning Complex

A key aspect of transportation planning is effective coordination between the different government agencies responsible for maintaining the various parts of the transportation infrastructure. In addition to the Southern Berks Region municipalities, these include the Reading Area Transportation Study (RATS), the Pennsylvania Department of Transportation (PennDOT), Berks County, and neighboring communities. As part of the process of preparing this transportation chapter, the RATS FFY 2017-2040 Long Range Transportation Plan (LRTP) was reviewed and considered. This section of the plan will focus on the local transportation infrastructure. Details on the PennDOT owned infrastructure can be found in the RATS Transportation Improvement Program (TIP) and the LRTP.

RATS is the regional transportation planning organization for the Reading, Pennsylvania metropolitan area, which covers all of Berks County. Working with PennDOT and the Federal Highway Administration (FHWA), RATS facilitates and is responsible for prioritizing approximately $80 million annually to advance transportation improvement projects throughout the county. PennDOT, South Central Transportation Authority (SCTA), and the 72 municipalities in the County are responsible for project implementation.

Capital Improvement Plans

Capital Improvement Plans (CIP) outline a schedule of public service expenditures over a certain period of years. The CIP does not address all of the capital expenditures for the municipality, but provides for large,

physical improvements that are permanent, including the basic facilities, services and installations needed for the functioning of the community. These include utilities, municipal facilities and other miscellaneous projects.

Roads

The Southern Berks Region has approximately 286 miles of roads, including approximately 83 miles of state-owned routes, 181 miles of municipal roads and 22 miles of private lanes. Nearly all of the roads are paved or improved. All roads owned by the municipalities are part of the Pennsylvania State Liquid Fuels Programs that provides state payments to the municipalities for road maintenance and reconstruction based on population and miles of roads meeting PennDOT specifications. However, the Liquid Fuels funds comprise only a small part of the municipal maintenance budgets and do not cover the cost of long-term maintenance and reconstruction.

Shown below is a comparison of the liquid fuels allocations in 2013 and 2018. The amount of money allocated to each municipality increased and overall, LFF increased 53%. Streets and roads owned and maintained by Southern Berks Region municipalities are in good condition. Municipalities will focus on continued maintenance, including resurfacing, and monitor the need to correct specific drainage problems and add shoulders based on available funding. Paving projects are scheduled annually based on street/road condition and available funding.

Liquid Fuels Allocations by Municipality 2013 & 2018

2013				2018			% Increase
Municipality	Miles	Allocation		Municipality	Miles	Allocation	
Birdsboro	16.03	$100,673		Birdsboro	16.03	$153,121	52%
Caernarvon	24.58	$104,983		Caernarvon	25.59	$162,900	55.1%
Robeson	62.1	$228,550		Robeson	62.88	$349,702	53%
Union	20.74	$90,133		Union	20.74	$136,958	51.9%
TOTAL	**123.45**	**$524,339**		**TOTAL**	**125.24**	**$802,681**	**53%**

Source: PennDOT Bureau of Municipal Services MLF Allocation Report, 2013 & 2018

Figure 12 shows the federal functional classifications assigned to roads in the area. The functional classification of a roadway may change over time based on changing traffic conditions. Classification of a road is based on an analysis of the volume of traffic using the facility, the type of trip provided, the length of trip, and the speed of the trip.

Arterials provide the highest level of service at the greatest speed for the longest uninterrupted distance, with some degree of access control. These roads are typically classified as principal arterials (sub-grouped by Interstate, Freeway/ Expressway, and other principal arterials) and minor arterials. Examples of roads of this type in the area include I-76, I-176, Routes 10, 23, and 724. These roads are owned and maintained by PennDOT.

Collectors provide a lower level of service at a slower speed. They provide service for shorter distances by collecting traffic from local roads and connecting them with arterials. Collectors are classified as major collectors and minor collectors. Local roads and streets are, by far, the most numerous of the road types in the area, accounting for nearly 71 percent of all roads. These roads provide access to individual properties and serve short distance, low speed trips. Examples include Route 345/Chestnut Street, Route 568, White Bear Road, Geigertown Road, Chestnut Hill Road, and Elverson Road. These roads are owned by PennDOT and the municipalities.

Average Annual Daily Traffic (AADT) is the total number of vehicles traveling on a road on an average day. Annual average daily traffic (AADT) volumes provide an overview of the traffic flow in the four Southern Berks Region municipalities for planning purposes. An important point to remember is that AADT does not reflect daily and seasonal traffic volumes that can far exceed AADT. The proportionate increase in daily and seasonal counts can be significant. PennDOT conducts traffic counts on state roads, and the counts provide the means to assess the overall traffic conditions in the area. Figure 12 illustrates 2018 AADT on area roadways. The heaviest traveled roads are the arterials in the area, namely I-76, I-176, Routes 10, 23, and 724.

Roadway surfaces in the area are mostly comprised of paved surface roadways. Of the paved surface roadways, pavements are either asphalt or concrete. PennDOT assesses pavement surface conditions using a variety of metrics that include International Roughness Index (IRI). IRI measures pavement roughness in terms of the number of inches per mile that a laser, mounted in a specialized van, jumps as it is driven along highway – the lower the IRI, the smoother the ride. Since PennDOT uses IRI in its pavement condition performance measures, Figure 13 shows the condition of pavement on state roads in the area.

Bridges

The topography and hydrology of the area provide ample recreational activities and commercial activities, but also create a transportation challenge to safely and efficiently move people and freight over them in Berks County. Overall, the bridges in the Southern Berks Region are in fair condition. In 2020, there are 66 bridges in the area, with the majority (50 bridges) owned by PennDOT. These bridges are those that require inspections – state bridges longer than eight feet and local bridges longer than 20 feet. Figure 13 shows the approximate location of bridges in the area. As the area's bridges continue to age and deteriorate, it is sometimes necessary to close bridges unexpectedly due to problems revealed during routine inspections. Bridges closed to traffic are those structures deemed unsafe to carry any type of traffic. As of 2018, there are two closed bridges in the Southern Berks Region. Both of these bridges are located on what was State Route 82 (Hay Creek Road), which is a route now closed for travel. PennDOT has proposed removal of both of these bridges in 2026.

Bridge in Robeson Township

Load posting a bridge is required by the National Bridge Inspection Standards when a bridge is not capable of safely carrying a legal load. If a bridge is deemed deficient, officials will post a maximum load for the bridge. Bridges may be posted for other load-capacity restrictions including speed and number of vehicles permitted on the bridge. There are eight (8) load-posted bridges in the area.

Poor condition bridges are characterized by deteriorated conditions of the major components of a bridge. This may include cracked concrete, the bridge deck, the support structure, or the entire bridge itself. A poor designation does not imply that a bridge is unsafe. However, such bridges typically require significant maintenance and repair to remain in service and would eventually require major rehabilitation or replacement to address the underlying deficiency. There are 13 such bridges in the area. Six bridges are owned by PennDOT, six are owned by municipalities and one is owned by Berks County. The state plans on removing two of the bridges they own in 2026 and have replacements scheduled for another two in 2021 and 2025. Hartz Mill Bridge, the bridge in poor condition owned by Berks County is scheduled for a superstructure replacement in the fall of 2019. This work was completed as of time of adoption of this plan. Figure 13 shows the location of the closed and posted bridges.

The table below shows the bridges of most concern in the region because municipalities own them and they are in poor condition as of October 2018.

Bridges of Concern

Bridge	Location	Built	Municipality	Length	Deck Area	AADT	Condition/Issue
Thousand Oak Blvd	South of Joanna	1986	Caernarvon	61	1,933.7	150	Poor
Gunhart Road	West of I-176	1920	Robeson	45	1,125	100	Poor/Posted
Rock Hollow Road	West of SR 2082	1960	Robeson	48	1,368	100	Poor/Posted
Schuylkill Road	Schuylkill Road	1917	Robeson	43	1,075	200	Poor
Old River Road	NW of Gibraltar	1935	Robeson	56	1,344	300	Poor/Posted
Seton Road	Green Hills	1970	Robeson	59	2,460.3	200	Poor/Posted
Source: PennDOT							

Congested Corridors

RATS developed a Congestion Management Process (CMP) in May 2016 that included an examination of the 38 most congested corridors in the County. These corridors were identified using both a Travel Time Index (TTI) and the Average Annual Daily Trips (AADT) in that corridor. The TTI is the ratio of the peak-period travel time to the free flow travel time. This congested speed data, from purchased GPS information, shows peak period travel (7-9 a.m. and 4-6 p.m.) speeds as a function of free-flow (non-congested) speeds. By plotting segments with TTI greater than 1.20 (speeds 20 percent slower than free-flow averages), congested segments can be easily identified. The identification of these segments can support effective decision making when providing input into regional transportation plans. Of the 38 most congested corridors in Berks County, seven (7) have been identified with at least a portion in the Southern Berks Region.

Corridor	Peak TTI	AADT	Length (Miles)	Truck %
PA 10 (I-176 to PA 23)	1.29	4,902-7,845	1.06	7-8
PA 23	4.58	12,092-18,371	3.0	4-7
PA 401	1.93	6,398	.20	8
I-176	1.11	6,076-12,790	11.36	12-17
SR 2089	1.32	3,376-3,722	11.36	11-12
PA 724 (I-176 to Birdsboro)	1.57	8,078-11,333	5.44	4-8
PA 345 (PA 724 to U.S. 422)	1.58	4,531-6,183	1.17	5-9
Source: RATS Congestion Management Process, 2016				

Safety

Maintaining a safe transportation system is essential to sustaining and enhancing the quality of life for Berks County residents. Deaths and injuries resulting from traffic crashes are a public health concern and impact local communities with medical costs, lost wages, insurance costs, taxes, police, fire, and emergency medical services, legal and court costs, and property damage.

As part of its safety program, PennDOT collects traffic crash data for the entire state and reports data at the state, county, and municipal level. For the purposes of this plan, county crash data for Berks County was analyzed. Motor vehicle crashes generally involve multiple contributing factors that may be related to drivers, the roadway, or the vehicle(s) involved, thus making transportation safety a multidisciplinary concern.

Analyzing crash trends allows PennDOT, RATS and Southern Berks Region municipalities to focus on setting goals to improve upon those trends by programming safety improvements to the road system itself or encouraging greater emphasis on education and enforcement.

Berks County has a significant amount of crashes – ranking sixth in the state in the number of overall crashes and fifth in the number of fatal crashes between 2011 and 2017. During the same span, there were 1,866 crashes in the Southern Berks Region. Approximately 51% of crashes occur on state roads, 33% on local roads, 8% on the Turnpike, and 8% on Interstate roads in the area. Between 2011 and 2017, crashes decreased by 1.4% in the area. Nineteen (19) of those crashes were fatal.

Total Number of Crashes in Southern Berks Region										
Municipality	2011	2012	2013	2014	2015	2016	2017	Total	% of Total	% Change
Birdsboro	29	25	20	19	15	26	31	165	8.8%	+6.9%
Caernarvon	93	106	88	102	107	83	102	681	36.5%	+9.7%
Robeson	105	84	101	85	102	86	83	646	34.6%	-21.0%
Union	53	62	44	51	55	49	60	374	20%	+13.2%
Total	280	277	253	257	279	244	276	1866		-1.4%
Source: PennDOT, Pennsylvania Crash Information Tool, 2011-2017										

Fatal Crashes in Southern Berks Region								
Municipality	2011	2012	2013	2014	2015	2016	2017	Total
Birdsboro	1	0	0	0	0	0	0	1
Caernarvon	0	1	1	0	0	0	3	5
Robeson	0	0	1	1	1	2	4	9
Union	0	0	1	0	3	0	0	4
Total	1	1	3	1	4	2	7	19
Source: PennDOT, Pennsylvania Crash Information Tool, 2011-2017								

Driving Behaviors

Unsafe driving behavior plays a significant role in crashes in Berks County. Aggressive driving and speeding are major factors, with distracted driving and tailgating as increasingly present contributors to crashes. Drivers are more distracted and more prone to speeding than we were in the 1990s or 2000s. Of note, crashes because of distracted driving in Berks County began to rise with the mass adoption of smartphones in the early-mid 2000s.

Distracted Driving Behaviors that Contributed to Crashes in Southern Berks Region								
Municipality	2011	2012	2013	2014	2015	2016	2017	Total
Birdsboro	1	4	3	4	1	2	1	16
Caernarvon	10	21	6	12	13	16	10	88
Robeson	8	2	10	7	6	7	7	47
Union	5	5	3	2	3	4	0	22
Total	24	32	22	25	23	29	18	173
Source: PennDOT, Pennsylvania Crash Information Tool, 2011-2017								

Aggressive Driving Behaviors that Contributed to Crashes in Southern Berks Region								
Municipality	2011	2012	2013	2014	2015	2016	2017	Total
Birdsboro	0	3	1	3	0	0	1	8
Caernarvon	5	10	7	15	10	7	5	59
Robeson	7	4	16	8	3	7	4	49
Union	3	3	3	5	3	0	4	21
Total	15	20	27	31	16	14	14	137
Source: PennDOT, Pennsylvania Crash Information Tool, 2011-2017								

Vulnerable Road Users (VRUs)

Vulnerable road users are those that are using the road without a vehicle surrounding them for protection. Most commonly, these are pedestrians, bicyclists, and motorcyclists in Berks County. The chart below shows there were nineteen (19) crashes involving pedestrians from 2011 to 2017, however none of these crashes resulted in fatalities. Of the seven (7) accidents involving a bicycle during the same time period, there was one (1) fatality in Robeson Township in 2017. From 2011 through 2017, ninety-nine (99) crashes occurred involving a motorcycle, with two (2) of the crashes resulting in fatalities. While fatality rates for vulnerable road users is low and declining, the charts below show that motorcycle crashes are by far the largest of the three classes of VRUs in the Southern Berks Region.

Crashes Involving Pedestrians in Southern Berks Region								
Municipality	2011	2012	2013	2014	2015	2016	2017	Total
Birdsboro	0	1	2	1	0	1	4	9
Caernarvon	3	0	1	0	0	1	0	5
Robeson	0	1	1	0	1	0	0	3
Union	1	0	0	0	0	0	1	2
Total	4	2	4	1	1	2	5	19
Source: PennDOT, Pennsylvania Crash Information Tool, 2011-2017								

Crashes Involving Bicycles in Southern Berks Region								
Municipality	2011	2012	2013	2014	2015	2016	2017	Total
Birdsboro	1	0	0	0	0	0	2	3
Caernarvon	0	1	0	0	0	0	0	1
Robeson	0	0	0	0	1	0	1	2
Union	0	0	0	0	0	1	0	1
Total	1	1	0	0	1	1	3	7
Source: PennDOT, Pennsylvania Crash Information Tool, 2011-2017								

Crashes Involving Motorcycles in Southern Berks Region								
Municipality	2011	2012	2013	2014	2015	2016	2017	Total
Birdsboro	2	2	1	1	1	2	2	11
Caernarvon	4	5	1	4	5	2	3	24
Robeson	6	4	6	2	8	3	6	35
Union	4	7	5	4	4	1	4	29
Total	16	18	13	11	18	8	15	99
Source: PennDOT, Pennsylvania Crash Information Tool, 2011-2017								

Transit

Public transportation forms a key component of the Berks County transportation system. While most travel in the area is by automobile, there is a significant and growing segment of the population that relies on public transportation to fulfill their needs. Public transportation is provided by both non-profit and profit organizations, supplying fixed route, and demand response services.

The principal provider of public transportation services in Berks County is the South Central Regional Transit Authority (SCTA). This authority oversees two divisions: the Berks Area Regional Transit Authority (BARTA) that serves Berks County and the Red Rose Transit Authority (RRTA) that serves Lancaster County.

The BARTA fixed route services 33 Berks County municipalities and carries approximately 2.8 million passengers annually. Operating seven days a week, with a fleet of 50 buses, it services 39 bus shelters and 1,475 bus stops on 19 routes over 1.4 million route miles. According to BARTA, 42% of those trips are work related, followed by 23% for shopping and 14% for personal business.

Overall, major trip origins/destinations (major employers, shopping centers, post-secondary schools) are served by BARTA fixed route bus service. Route 8, which provides service between Reading and Birdsboro, had the 7th greatest weekday ridership in the BARTA system, serving 140,541 passenger trips in 2017. This route currently runs between Reading and Exeter Square on the weekends not providing weekend service to Birdsboro.

SCTA updated their Transit Development Plan in August of 2018 which included recommendations for changes to occur overtime. This plan identified proposed changes to Route 8. Route 8 would end all trips at Exeter Square and operate a new Route 8x to provide express service with limited stops between Reading and Birdsboro via Perkiomen Avenue and Lincoln Road. By creating this express route BARTA would increase AM and PM peak service frequency. SCTA also identified Birdsboro as a potential new park-and-ride area to increase access to existing service.

Special Services Operations

BARTA's Special Services Division is responsible for operating and administering most human service transportation in Berks County. These services including the Shared Ride, ADA, and Medical Assistance Transportation Program (MATP) programs, and are specialized, demand-responsive paratransit service and provide public transportation to persons whose disabling condition prevents the use of fixed route transit.

With a fleet of 58 paratransit vehicles, BARTA provided nearly 230,000 trips in 2017. The majority of trips (41%) were for medical appointments, followed by work (18%) and accessing senior centers (11%).

Non-Motorized Transportation

Anytime you don't use your car, the bus or other motorized transport, you become a "non-motorized" traveler. These trips take place on a variety of different facilities, some reserved exclusively for non-motorized users such as sidewalks and trails, while others take place on multi-function transportation facilities such as bike lanes on streets. Walking and biking are important parts of the area's overall transportation system as they are two of the most basic and affordable forms of transportation available.

The area has a diverse non-motorized transportation system. The mix of rural roads in Union and Robeson Townships to borough streets in Birdsboro, and the 100 miles of trails and 44 miles of sidewalks provide bicyclists and pedestrians with varied routes. As part of the Bicycle PA system there are two designated intrastate bicycle routes that pass through the Southern Berks Region, including "Route L" along Route 23 and "Route Y" along 345, Shed Road, and Route 724.

Most pedestrian trips are short; therefore, the Birdsboro and Morgantown areas have the greatest influence on creating viable pedestrian transportation networks. Sidewalks in the Southern Berks Region outside of these downtowns are mostly limited to subdivisions. Sidewalks provide a safe means for residents of these neighborhoods to access nearby attractions such as schools, parks, and adjacent subdivisions to the existing sidewalk network. Going forward, new land developments and subdivisions, especially ones served by public sewer and water utilities, should be encouraged to have sidewalks on one side of all streets when within two (2) miles of a school, or 0.5 miles of a greenway, park or shopping area, or when there is an existing sidewalk network adjacent to the proposed development.

Future Projects

Interstate 76 Widening

The project of widening Interstate 76 appears on the Long Range Transportation Plan. The widening of I-76 where it passes through Caernarvon would require the replacement of two of the bridges that run over I-76 including State Route 23 in Caernarvon and Twin Valley Road on the border of Caernarvon Township and Chester County.

Addition of Median Barriers on I-176 - MPMS #104435

This project will install Median Guiderail along Interstate 176 from the Turnpike Interchange to the 724 Interchange including Robeson and Caernarvon Townships. The project was begun in 2019 and has since been completed by the time of adoption of this plan.

Bridge Replacement/Rehabilitation on Main Street/(SR 0724) over Allegheny Creek - MPMS #10700

This project replaces a steel I beam bridge in Robeson rated in poor condition that was built in 1956. The project is expected to begin in 2025.

Bridge Replacement/Rehabilitation on Alleghenyville Road/(SR 3024) over I-176 - MPMS #110017

This project replaces a prestressed precast concrete box beam bridge in Robeson rated in fair condition that was built in 1962. The project is expected to begin in 2023.

Bridge Replacement/Rehabilitation on Green Hills Road/(SR 0568) over Allegheny Creek - MPMS #79086

This project replaces a steel I beam bridge in Robeson rated in poor condition that was built in 1937. The project is expected to begin in 2021.

Bridge Replacement/Rehabilitation on Mill Road/(SR 7207) over Conestoga Creek - MPMS #103141

This project replaces Hartz Mill Bridge, a prestressed precast concrete box beam bridge in Caernarvon rated in poor condition that was built in 1956. The project is expected to begin in 2019.

Bridge Replacement/Rehabilitation on Morgantown Road/(SR 0010) over a tributary to Conestoga Creek - MPMS #10943

This project replaces a steel I beam bridge rated in poor condition that was built in 1952. The project is expected to begin in 2022. Although this bridge is located in New Morgan it borders Caernarvon along State Route 10, the work involved will have an impact while traveling through the Southern Berks Region on State Route 10.

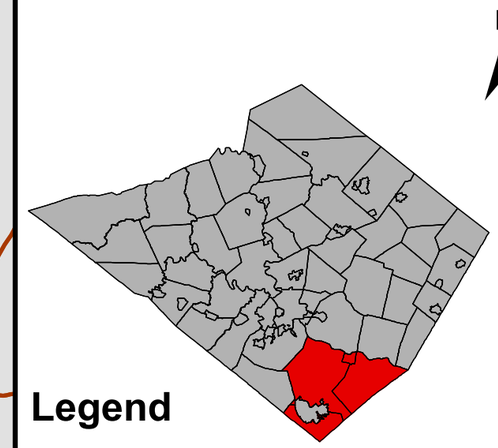
Airports and Railroads

Given the regional nature of airport and railroad development and support, this Comprehensive Plan calls for no specific with regard to air and rail service and instead adopts the RATS FFY 2017-2040 Long Range Transportation Plan in regards to these modes as reference.

FIGURE 12

Caernarvon, Robeson, Birdsboro, Union
Joint Comprehensive Plan Update: August 18, 2020

Road Classifications and Average Daily Traffic



Legend

- Principal Arterials
- Minor Arterials
- Urban Collectors
- Rural Major Collectors
- Rural Minor Collectors
- 555 Traffic Volume
- Roads
- Railroads
- Public Airport
- Streams and Water Bodies
- Municipal Boundaries
- County Boundaries

Source data: Berks County Planning Commission GIS, Berks County GIS/IS, Berks County Mapping, Berks DES, PennDOT

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BAB 8/20

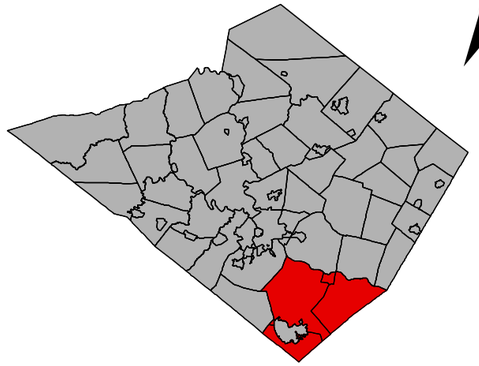
0 1 2 Miles

Birdsboro Borough

FIGURE 13

Caernarvon, Robeson, Birdsboro, Union
Joint Comprehensive Plan Update: August 18, 2020

Bridge and Pavement Conditions



Legend

- State-Owned Bridges
- County-Owned Bridges
- Municipal-Owned Bridges
- Fair Overal Condition
- Good Overall Condition
- Poor Overal Condition
- Closed Bridges
- Posted Bridges
- Roads
- Railroads
- Streams and Water Bodies
- Municipal Boundaries
- County Boundaries

Source data: Berks County Planning Commission GIS, Berks County GIS/IS, Berks County Mapping, Berks DES, PennDOT

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BAB 8/20

Pavement Conditions

- Excellent
- Fair
- Good
- Poor

0 1 2 Miles